AN ANNOTATED CHECK-LIST OF THE EPIPHYTIC ORCHIDS OF SOUTH AFRICA WITH KEYS TO THE GENERA AND SPECIES

E. A. C. L. E. Schelpe

(*University of Cape Town*)

Taxonomic work done on this group since the publication of Rolfe's treatment of the Orchidaceae in the *Flora Capensis* (1912) has resulted in nomenclatural changes and in changes in the concepts of species and genera among the South African epiphytic orchids. Schlechter (1918), in a revision of the angraecoid orchids, proposed a new classification of this group, which, with modifications, has been accepted for some time by orchidologists, but which has been ignored by some botanists in South Africa. The more recent studies of African orchids by Summerhayes (1937—1960) have also led to changes in generic and specific concepts. A few new records for this region have resulted from recent field work and it is considered desirable that the present knowledge of the South African epiphytic orchids should be summarised and made known in advance of a monographic revision of these plants envisaged by the author when more material is available.

Names used in the *Flora Capensis* which are nomenclatural or taxonomic synonyms are given in italics and the numbers in brackets placed after specific epithets refer to the appended notes. The genera are grouped according to the second edition of Schlechter's *Die Orchideen* (1927).

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Group **Polystachyinae**

ANSELLIA Lindl.
  gigantea Reichb. f. (1)
  gigantea Reichb. f. var. nilotica (Bak.) Summerh.

POLYSTACHYA Juss.
  imbricata Rolfe (2)
  transvaalensis Schltr. (3) (*P. natalensis* Rolfe)
  tessellata Lindl. (4)

tessellata Lindl. var. tricruris (Reichb. f.) Schelpe (*P. tricruris* Reichb. f.)
modesta Reichb. f. (5) (*P. rigidula* Reichb. f. & *P. similis* Reichb. f.)
ottoniana Reichb. f. (6) (*P. glaberrima* Schlecht.)
sandersonii Harv. (7)
pubescens Reichb. f.
sp. aff. fusiformis (Thouars) Lindl. (8)
gerrardii Harv.
zuluensis L.Bol. (9)

Group **Bulbophyllinae**

BULBOPHYLLUM Thouars
sandersonii Reichb. f. (10) (*Megaclinium sandersoni* [Reichb. f.] Oliv. & *M. scaberulum* Rolfe.)

Group **Sarcanthinae**

ACAMPE Lindl.
pachyglossa Reichb. f. (11)

DIAPHANANTHE Schltr.
xanthopollinium (Reichb. f.) Summerh. (12) (*Mystacidium gerrardii* Bol. & *M. peglerae* Bol.)

MICROCOELIA Lindl.
exilis Lindl. (13) (*Angraecum chiloschistae* Reichb. f.)

BOLUSIELLA Schltr.
maudae (Bol.) Schltr. (14) (*Angraecum maudae* Bol.)

AERANGIS Reichb. f.
mystacidii (Reichb. f.) Schltr. (15) (*Angraecum mystacidii* Reichb. f.)

RANGAERIS (Schltr.) Summerh.
muscicola (Reichb. f.) Summerh. (16)

MYSTACIDIUM Lindl.
millarii Bol.
caffrum (Bol.) Bol.
braybonae Summerh. (17)
capense (L.f.) Schltr. (18) (*M. filicorne* Lindl.)
venosum Harv. ex Rolfe.
gracile (Reichb. f.) Harv.
flanaganii (Bol.) Bol.
pusillum Harv.
aliciae Bol.

CYRTORCHIS Schltr.
- arcuata (Lindl.) Schltr. (*Listrostachys arcuata* [Lindl.] Reichb. f.)
- praetermissa Summerh. (19)

TRIDACTYLE Schltr.
- bicaudata (Lindl.) Schltr. (*Angraecum bicaudatum* Lindl.)
- tricuspis (Bol.) Schltr. (*Angraecum tricuspe* Bol.)
- tridentata (Harv.) Schltr. (20) (*Angraecum tridentatum* Harv. & *A.bolusii* Rolfe.)

ANGRAECUM Bory
- conchiferum Lindl.
- cultriforme Summerh. (21)
- sacciferum Lindl.
- pusillum Lindl. (22) (*A. burchellii* Reichb. f.)

1. According to Summerhayes (1937b) the variety *nilotica* can be distinguished from typical *A. gigantea* by its larger and more heavily spotted (or barred) flowers and by the development of keels on the side lobes of the lip. Further study of this genus in Southern Africa is required.

2. *P. imbricata* subsp. *imbricata* has been discovered in the Letaba district of the Transvaal. (Illustrated in Schelpe [1961].)

3. *P. natalensis* Rolfe was apparently described from a small plant *P. transvaalensis*. *P. nigrescens* Rendle and *P. rendlei* Rolfe are also given as synonyms by Summerhayes (1956).

4. *P. tricruris* is considered to be conspecific with *P. tessellata* by Summerhayes (1942). However, two geographically-segregated variants are known to occur in South Africa. Yellow-flowered plants which occur as far south as the Nelspruit district of the Transvaal are referable to typical *P. tessellata* (see Fl. Pl. S.Afr.: pl. 846). In a more southerly area, from Zululand to Port St. Johns, the plants have lilac flowers tinged with brown and have a narrower lip (see Bolus, Ic. Orch. Austr. Afr., **2:** t.33). The type of *P. tricruris* was collected within this area, near the Tugela River, and was most probably a plant with brownish-lilac flowers. This southern segregate appears to be a distinct variety and the name *Polystachya tessellata* Lindl. var. *tricruris* (Reichb. f.) Schelpe comb. nov. is proposed for it. (*Polystachya tricruris* Reichb. f. in Flora, **50:** 118 [1867]).

5. Of the earliest names available for this species (*P. modesta* Reichb. f., *P. rigidula* Reichb. f. published simultaneously in Flora, **50:** 114, 117 [1867]) Summerhayes (1942) chose *P. modesta*.

6. *P. glaberrima* Schlecht. as well as *P. pisobulbon* Kraenzl. are most probably synonyms of *P. ottoniana.*

7. A plant from the Woodbush area of the eastern Transvaal illustrated under the name *P. sandersonii* in Fl. Pl. S.Afr., pl. 627, appears to be a new species allied to *P. zambesiaca* Rolfe.

8. This unusual species with superposed pseudobulbs has been collected in the Ngome Forest in Natal and in the Woodbush area of the eastern Transvaal. It is to be described as a new species by Summerhayes. (Illustrated in Schelpe [1961].)

9. *P. zuluensis* L. Bol. was described and illustrated in Fl. Pl. S.Afr.. **19:** pl. 727 (1939) from plants sent from the Lebombo Mountains where it grows on Vellozia stems.

10. The genus Megaclinium is not separable from Bulbophyllum. *M. scaberulum* Rolfe is only a form of *B. sandersonii* with squat pseudobulbs. *B. oreonastes* Reichb. f. with orange-brown flowers and a slightly dorsiventrally-compressed peduncle may be found in the eastern Transvaal.

11. The predominantly east tropical African *A. pachyglossa* is known from the Letaba district of the Transvaal and from near Stegi in Swaziland. It was illustrated in Fl. Pl. Afr.: pl. 1175.

12. *Mystacidium gerrardii* Bol. and *M. peglerae* Bol. were transferred to the genus Rhipidoglossum by Schlechter (1918). Summerhayes (1937a) found *M. gerrardii* to be conspecific with *R. xanthopollinium* (Reichb. f.) Schltr. Later Summerhayes (1960) transferred both species to Diaphananthe on the grounds that Rhipidoglossum and Diaphananthe could not be maintained as distinct genera. The author has re-examined the type-material of *M. peglerae* Bol. and finds that it is conspecific with *D. xanthopollinium.*

13. The African leafless angraecoid orchids, including Microcoelia, were revised by Summerhayes (1943).

14. Schlechter (1918) grouped the angraecoid orchids with iridiform leaves in Bolusiella.

15. *A. mystacidii* was illustrated by Bolus (Ic. Orch. Austr. Afr., **2:** t.2) under the name of *Angraecum saundersiae* Bol., which is a synonym.

16. *R. muscicola* was collected by Rudatis at Dumisa, Natal, and by the author at Port St. Johns and near Port Edward. Rangaeris was originally a subgenus of Aerangis in Schlechter's (1918) revision.

71. *M. braybonae* was described by Summerhayes (1949) from plants collected in the Zoutpansberg near Louis Trichardt.

18. *Epidendrum capense* L.f. (1781) antedates both *Limodorum longicorne* Thunb. and *Mystacidium filicorne* Lindl. (1836).

19. *C. praetermissa* Summerhayes (1949) is known from the lowveld of the eastern Transvaal and from Zululand as far south as the Ngoya Forest.

20. Summerhayes (1948) regards *T. tridentata* as a variable species of which *A. bolusii* is a synonym.

21. *A. cultriforme* Summerhayes (1958), a widespread east-African species, has been discovered near Mtubatuba in Zululand.

22. *A. burchellii* Reichb. f. is regarded by the author as only a large, moist-forest form of *A. pusillum.* Summerhayes (1958) retained them as separate species.

Generic Key to the Epiphytic Orchids known to occur in South Africa.

1. Plants with sympodial growth, i.e. with pseudobulbs on a rhizome and new growths arising from the base or middle of the pseudobulb formed in the previous year; inflorescences arising from the apices or bases of the pseudobulbs	2.
1. Plants with monopodial growth, i.e. without pseudobulbs and growth normally continuing at the apex of the stem; inflorescences arising in the axils of the leaves	4.
2. Inflorescence arising from the base of the pseudobulb which bears two leathery leaves at the apex	BULBOPHYLLUM
2. Inflorescence arising from the apex of the pseudobulb	3
3. Pseudobulbs cylindrical 30 cm. or more tall bearing a group of ribbed leaves more than 20 cm. long: dorsal sepal more than 2 cm. in length	ANSELLIA
3. Pseudobulbs cylindrical to pyriform less than 25 cm. long; dorsal sepal less than 2 cm. in length	POLYSTACHYA
4. Peduncle stout, 4–5 mm. in diam.; inflorescence usually shorter than the leaves, bearing fleshy yellow flowers with purple-brown markings	ACAMPE
4. Peduncle 3 mm. or less in diam.; flowers white, cream or pale green	5.
5. Plant leafless and with branched roots	MICROCOELIA
5. Plant with leaves or if leafless then with unbranched roots	6.
6. Leaves iridiform, laterally compressed	BOLUSIELLA
6. Leaves dorsiventral or terete	7.
7. Pollinia with separate stipes and separate viscidia	8.
7. Pollinia attached to a single viscidium	9.
8. Spur curved through a semi-circle; flowers pellucid; leaves spaced about 1 cm. apart	DIAPHANANTHE
8. Spur straight or slightly curved; flowers opaque; leaves closely set or leafless	MYSTACIDIUM
9. Distal half of lip trilobed	TRIDACTYLE
9. Distal half of lip not lobed	10.
10. Rostellum not elongate but deeply cleft	ANGRAECUM
10. Rostellum more or less elongated	11.
11. Lip similar in shape and size to the recurved petals; spur less than three times the length of the lip	CYRTORCHIS
11. Lip different in shape to the petals; spur more than four times the length of the lip	12.

12. Pollinia attached by separate stipes to a large common viscidium; lip broadly triangular ..	RANGAERIS
12. Pollinia attached by a common stipe to a single viscidium; lip narrowly ovate	AERANGIS

KEY TO THE SOUTH AFRICAN SPECIES OF *POLYSTACHYA.*

1. Pseudobulbs with a single leaf c. 15 cm. long and c. 2.5 cm. broad; flowers small, green, borne on a panicle	*gerrardii*
1. Pseudobulbs with two or more leaves	2.
2. Pseudobulbs superposed, new growth arising from about the middle of the previous year's pseudobulb ..	*sp.* aff. ***fusiformis***
2. Pseudobulbs not superposed, new growth arising from base of the previous year's pseudobulb	3.
3. Pseudobulbs cylindrical not swollen at their bases.	4.
3. Pseudobulbs swollen at their bases	5.
4. Flowers arising from between crowded, overlapping bracts; leaves acute, membraneous ..	*imbricata*
4. Flowers subtended by distant bracts; leaves rounded, coriaceous, turning black on drying ..	*transvaalensis*
5. Plants deciduous; flowers pale-lilac produced on inflorescences developed in the previous growing season	*zuluensis*
5. Plants not deciduous; flowers lilac, yellow, greenish-brown or white developed on inflorescences developed during the current growing season	6.
6. Flowers 4–7 mm. across; inflorescence usually compound	7.
6. Flowers more than 8 mm. across; inflorescence simple	8.
7. Lip with a keel or ridge along the centre of the lip	*tessellata*
7. Lip without a keel	*modesta*
8. Lip pubescent to villous; flowers yellow with longitudinal brown markings on the lip and lateral sepals	*pubescens*
8. Lip glabrous; flowers without longitudinal brown markings ..	9.
9. Apex of lip blunt, fleshy; lip with semiorbicular sidelobes and with a dome-like callus at the base of the front lobe ..	*sandersonii*
9. Apex of lip membraneous, mucronate acute to acuminate; lip with oblong side-lobes and with a central keel extending from the base of the lip almost to the base of the front-lobe ..	*ottoniana*

KEY TO THE SOUTH AFRICAN SPECIES OF *MYSTACIDIUM*

1. Plant leafless (or with one or two deciduous leaves up to 2 cm. long) with a mass of thin wiry roots, c. 1 mm. thick; spur c. 2.5 cm. long; flowering August—October	*gracile*

1. Plant leafy with comparatively few roots; roots more than 1.5 mm. thick	2.
2. Spur of the lip with a wide throat (i.e. inflated at the base); flowers crowded on short inflorescences	3.
2. Spur of the lip with a narrow throat (i.e. not inflated at the base); flowers spaced along the inflorescence	5.
3. Lip acute	*braybonae*
3. Lip rounded to emarginate	4.
4. Leaves 9–11 cm. long; apex of spur not inflated; column white	*millarii*
4. Leaves 4–7 cm. long; apex of spur inflated; column emerald-green	*caffrum*
5. Flowers white; spur more than 2.5 cm. long	6.
5. Flowers pale green or pale yellow; spur less than 2.5 cm. long	
6. Leaves 6—10 cm. long, 1.2 cm. broad; spur 4—5 cm. long; dorsal sepal linear-lanceolate, flowering October—January	*capense*
6. Leaves 2.5—5 cm. long, 0.6 cm. broad; spur 2.5—3 cm. long; dorsal sepal ovate; flowering May—July	*venosum*
7. Spur 0.7 cm. long; rostellum narrow	*aliciae*
7. Spur more than 1 cm. long; rostellum broad	8.
8. Petals acuminate; rostellum smooth	*flanaganii*
8. Petals rounded; rostellum barbate	*pusillum*

KEY TO THE SOUTH AFRICAN SPECIES OF *CYRTORCHIS*

1. Leaves flat; dorsal sepal 1.6—3 cm. long; spur 2.3—3.5 cm. long	*arcuata*
1. Leaves strongly keeled; dorsal sepal c. 1 cm. long; spur c. 2 cm. long	*praetermissa*

KEY TO THE SOUTH AFRICAN SPECIES OF *TRIDACTYLE.*

1. Leaves terete; lateral lobes of the distal portion of the lip acuminate	*tridentata*
1. Leaves dorsiventral, keeled; lateral lobes of the lip truncate or fimbriate	2.
2. Lateral lobes of the lip truncate, serrate	*tricuspis*
2. Lateral lobes of the lip fimbriate	*bicaudata*

KEY TO THE SOUTH AFRICAN SPECIES OF *ANGRAECUM.*

1. Spur more than 1 cm. long	2.
1. Spur less than 0.5 cm. long	3.
2. Spur inflated at apex, 1.8—2 cm. long; leaves falcate	*cultriforme*
2. Spur not inflated at apex, 3.5—5 cm. long; leaves linear	*conchiferum*
3. Flowers 1—4 per inflorescence, 6 mm. across; spur curved and inflated, as long as the lip; flowering December—February	*sacciferum*
3. Flowers 5—17 per inflorescence, 4 mm. across; spur straight, not inflated, half as long as the lip; flowering July—September	*pusillum*

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